WHAT IS CLAIMED IS:

1. An apparatus for increasing fractionation capacity and efficiency of chemical compounds within a preexisting distillation column with a vessel having at least one preexisting fractionation tray deck with a multiplicity of openings, comprising:

a conversion microdisperser configured to attach through at least one of the multiplicity of openings such that vapor from beneath the tray deck flows through the microdisperser to interact with liquid flow above the tray deck whereby greater and more efficient vapor-liquid interaction is promoted.

2. The apparatus of claim 1 wherein the microdisperser is directionally oriented.

3. The apparatus of claim 1 wherein the microdisperser is a valve.

4. The apparatus of claim 3 wherein the valve has a vapor deflecting perforation such that the vapor has greater contact with the liquid.

5. The apparatus of claim 1 wherein the microdisperser is an individual bubble promoter.

6. The apparatus of claim 5 wherein the microdisperser is round.

7. The apparatus of claim 5 wherein the microdisperser is square.

8. The apparatus of claim 5 wherein the microdisperser is rectangular-shaped to cover at least one multiplicity of openings and at least a portion of the tray deck.

9. The apparatus of claim 5 wherein the bubble promoter has one or more flat sides.

10. The apparatus of claim 5 wherein the bubble promoter has perforated sides.

11. The apparatus of claim 5 wherein the bubble promoter has at least one vapor deflecting perforation such that the vapor has greater contact with the liquid.

12. The apparatus of claim 1 wherein the microdisperser is configured to attach to more than one opening of the tray deck.

13. The apparatus of claim 1 wherein the microdisperser is continuous over a portion of an inlet section of the tray deck.

14. The apparatus of claim 1 wherein the microdisperser spans over a tray support beam.

15. The apparatus of claim 1 wherein the microdisperser is installed at or near a tray support beam.

16. The apparatus of claim 1 wherein the microdisperser is installed at or near a peripheral edge of the fractionation tray deck near a side wall of the vessel.

17. A kit for revamping a preexisting distillation column with a vessel having at least one existing fractionation tray deck having a multiplicity of openings, comprising:

at least one conversion microdisperser to increase vapor-fluid contact;

attachment means to attach the conversion microdisperser through at least one of the multiplicity of openings;

instructions for optimally placing the at least one conversion microdisperser in at least one multiplicity of openings such that fractionation capacity and efficiency is increased; and

a diagram for optimal placement of the conversion microdisperser.

18. The kit of claim 17 wherein the conversion microdisperser is a microdispersion valve.

19. The kit of claim 17 wherein the conversion microdisperser is an individual bubble promoter.

20. A system for increasing fractionation capacity and efficiency of chemical compounds within a preexisting distillation column having a vessel with an existing inlet downcomer, and at least one existing fractionation tray deck having a multiplicity of openings, comprising:

a multiplicity of conversion microdispersers configured to reconfigure flow through a respective multiplicity of openings in which the conversion microdisperser is installed therein such that vapor to fluid contact surface area is increased within the opening.

21. The system of claim 20 wherein the conversion microdispersers are installed over at least a portion of an inlet section of the fractionation tray deck.

22. The system of claim 20 wherein the conversion microdisperser replaces a valve.

23. The system of claim 20 wherein the conversion microdisperser is an individual bubble promoter.

24. The system of claim 20 wherein the conversion microdisperser is a microdispersion valve.

25. The system of claim 20 wherein the conversion microdispersers are installed near a side wall of the vessel.

26. The system of claim 20 wherein the conversion microdispersers are installed along a periphery of the fractionation tray deck near the side wall of the vessel.

27. The system of claim 20 wherein the conversion microdisperser are installed over a support beam portion.

28. The system of claim 20 wherein a new inlet downcomer panel replaces the existing inlet downcomer panel.

29. The system of claim 20 where a packing selected from the group consisting of structured or random packing is installed within the column.

30. A method for increasing fractionation capacity and efficiency of chemical compounds within a preexisting distillation column with a vessel having at least one existing fractionation tray deck having a multiplicity of openings, comprising:

selecting at least one conversion microdisperser; and

installing the microdisperser within an at least one multiplicity of openings.

31. The method of claim 30 further comprising removing an existing valve in the at least one multiplicity of openings and replacing the existing valve with a microdisperser.

32. The method of claim 30 wherein the microdisperser is installed in an inlet section of the existing fractionation tray deck.

33. The method of claim 30 wherein the microdisperser is installed over at least two multiplicity of openings in the existing fractionation tray deck.

34. The method of claim 30 wherein the installing step of the microdisperser is over an inactive zone of the existing fractionation tray deck.

35. The method of claim 34 wherein the inactive zone is at or near a tray support ring near an edge of the existing fractionation tray deck near a sidewall of the vessel.

36. The method of claim 34 wherein the inactive zone is at or near a tray support beam.

37. The method of claim 36 wherein the inactive zone spans over the tray support beam.

38. The method of claim 30 further comprising spacing more than at least one microdisperser in directionally oriented positions on the existing fractionation tray deck to direct a vapor stream through the multiplicity of openings in the existing fractionation tray deck at a uniform rate and a fluid flow across a surface of the existing fractionation tray deck without any stagnant flow.